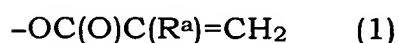


## CLAIMS

1. A composition curable by radical photo curing and cationic photo curing in combination, comprising the under-mentioned components (A), (B), (C) and (D) as essential components:

(A) a vinyl polymer having two or more groups represented by general formula (1):



wherein  $\text{R}^a$  represents a hydrogen atom or an organic group having 1 to 20 carbon atoms, per molecule, the group represented by general formula (1) being present at one or more molecular ends;

(B) an epoxy compound and/or an oxetane compound;

(C) a radical photopolymerization initiator; and

(D) a cationic photopolymerization initiator.

2. The curable composition of Claim 1, wherein the vinyl monomer constituting the main chain of component (A) comprises a (meth)acrylic monomer as a main component.

3. The curable composition of Claim 1 or 2, wherein the vinyl monomer constituting the main chain of component (A) comprises an acrylic acid ester monomer as a main component.

4. The curable composition of any one of Claims 1 to 3, wherein the vinyl monomer constituting the main chain of component

(A) contains at least 2 monomers selected from the group consisting of butyl acrylate, ethyl acrylate and 2-methoxyethyl acrylate.

5        5. The curable composition of any one of Claims 1 to 4, wherein R<sup>a</sup> is a hydrogen atom or a hydrocarbon group having 1 to 20 carbon atoms.

6. The curable composition of Claim 5, wherein R<sup>a</sup> is a hydrogen atom or a methyl group.

10

7. The curable composition of any one of Claims 1 to 6, wherein component (A) is produced by reacting a compound indicated by general formula (2):

15     $M^+OC(O)C(R^a)=CH_2$  (2)

wherein R<sup>a</sup> represents a hydrogen atom or an organic group having 1 to 20 carbon atoms and M<sup>+</sup> represents an alkali metal ion or a quaternary ammonium ion, with a vinyl polymer having halogen groups at the molecular ends.

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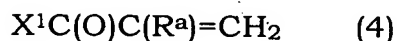
8. The curable composition of Claim 7, wherein the vinyl polymer having halogen groups at the molecular ends has a group indicated by general formula (3):

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$-CR^1R^2X$  (3)

wherein R<sup>1</sup> and R<sup>2</sup> represent a group bonded to the ethylenically unsaturated group of a vinyl monomer, and X represents a chlorine atom, a bromine atom or an iodine atom.

- 5                    9. The curable composition of any one of Claims 1 to 6, wherein component (A) is produced by reacting a compound indicated by general formula (4):



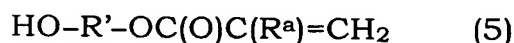
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wherein R<sup>a</sup> represents a hydrogen atom or an organic group having 1 to 20 carbon atoms, and X<sup>1</sup> represents a chlorine atom, a bromine atom or a hydroxyl group, with a vinyl polymer having hydroxyl groups at the ends.

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10. The curable composition of any one of Claims 1 to 6, wherein component (A) is produced by:

- (1) reacting a diisocyanate compound with a vinyl polymer having hydroxyl groups at the ends, and  
20 (2) reacting a compound indicated by general formula (5):



wherein R<sup>a</sup> represents a hydrogen atom or an organic group having 1  
25 to 20 carbon atoms and R' represents a divalent organic group having 2 to 20 carbon atoms, with the residual isocyanate group.

11. The curable composition of any one of Claims 1 to 10, wherein the main chain of component (A) is produced by a living radical polymerization of a vinyl monomer.

5           12. The curable composition of Claim 11, wherein the living radical polymerization is atom transfer radical polymerization.

13. The curable composition of Claim 12, wherein a transition metal complex being the catalyst of the atom transfer radical  
10 polymerization is selected from complexes of copper, nickel, ruthenium and iron.

14. The curable composition of Claim 13, wherein the transition metal complex is a complex of copper.  
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15. The curable composition of any one of Claims 1 to 10, wherein the main chain of component (A) is produced by the polymerization of a vinyl monomer using a chain transfer agent.

20           16. The curable composition of any one of Claims 1 to 15, wherein component (A) has a number average molecular weight of 3,000 or more.

25           17. The curable composition of any one of Claims 1 to 16, wherein the vinyl polymer of component (A) has a ratio of weight average molecular weight to number average molecular weight of less than 1.8 determined by gel permeation chromatography.

18. The curable composition of any one of Claims 1 to 17, which further contains a monomer and/or an oligomer having a radical polymerizable group.

5           19. The composition of any one of Claims 1 to 18, which further contains a monomer and/or an oligomer having an anionic polymerizable group.

20. The curable composition of Claim 18 or 19, which  
10 contains a monomer and/or an oligomer having a (meth)acryloyl group.

21. The curable composition of Claim 20, which contains a monomer and/or an oligomer having a (meth)acryloyl group and having a number average molecular weight of 5,000 or less.

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22. The curable composition of any one of Claims 1 to 21, wherein the epoxy compound and/or oxetane compound of component (B) has no aromatic ring.

20           23. The curable composition of any one of Claims 1 to 22, which further contains (E) a compound having an epoxy group and a (meth)acryloyl group in its molecule.

24. The curable composition of Claim 23, wherein  
25 component (E) is glycidyl methacrylate.